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## 1. Data Set Description:

This data set contains measurements taken from six meteorological instruments operated at the Fresno supersite from May 24, 2000 to December 31, 2006. The ambient temperature is measured by a Met One Instruments aspirated thermistor, Model 060A-2. The barometric pressure is measured by a Met One Instruments pressure transducer, Model 090D. The relative humidity is measured by a Met One Instruments aspirated thin film capacitor, Model 083V. The solar radiation is measured by a LI-COR Inc. pyranometer, Model LI-200SA. The wind speed is measured by a Met One Instruments 3-cup anemometer, Model 010-SC. The wind direction is measured by a Met One Instruments High-Sensitivity wind vane, Model 025-5C. All six instruments report 5 minute samples.

The **Fresno Supersite** is one of several Supersites that was established in urban areas within the United States by the U.S. Environmental Protection Agency (EPA) to better understand the measurement, sources, and health effects of suspended particulate matter (PM). The site is located at 3425 First St., approximately 1 km north of the downtown commercial district. First Street is a four-lane artery with moderate traffic levels. Commercial establishments, office buildings, churches, and schools are located north and south of the monitor. Medium-density single-family homes and some apartments are located in the blocks to the east and west of First Street. The Fresno Supersite began operation in May of 1999 and continues today. Other sponsors of this on-going monitoring program include the National Oceanographic and Atmospheric Administration (NOAA) and the California Air Resources Board (CARB).

The [U.S. EPA Particulate Matter \(PM\) Supersites Program](#) was an ambient air monitoring research program from 1999-2004 designed to provide information of value to the atmospheric sciences, and human health and exposure research communities. Eight geographically diverse projects were chosen to specifically address these EPA research priorities: (1) to characterize PM, its constituents, precursors, co-pollutants, atmospheric transport, and its source categories that affect the PM in any region; (2) to address the research questions and scientific uncertainties about PM source-receptor and exposure-health effects relationships; and (3) to compare and evaluate different methods of characterizing PM including testing new and emerging measurement methods. Data collected by these projects are publicly available at the NARSTO Permanent Data Archive, NASA Langley DAAC. Data users should acknowledge the U.S. EPA Particulate Matter (PM) Supersites Program and the project investigator(s) listed below.

### The data set should be cited as follows:

Watson, John G. and Judith C. Chow. 2007. NARSTO EPA\_SS\_Fresno Meteorological Data. Available on-line via [NARSTO Data and Information](#) at the Atmospheric Science Data Center at NASA Langley Research Center, Hampton, Virginia, U.S.A.

More information can be found in the [Quality Assurance Project Plan](#) (PDF).

## 2. Sample Data Record/Data Format:

Data files are in the NARSTO Data Exchange Standard (DES) format that is described in detail on the [NARSTO Quality Systems Science Center \(QSSC\) web site](#). The files follow a tabular layout and are stored as ASCII comma-separated values files (.csv). The DES does not rely on row position to identify specific information, but uses a tag to describe the information contained in the row. The DES is a self-documenting format with three main sections: the header contains information about the contents of the file and the data originator; the middle section contains metadata tables that describe/define sites, flags, and other codified fields; and the final section is the main data table that contains key sampling and analysis information and the data values. Descriptions of the standardized metadata fields are also available on the QSSC web site.

## Quality Control Level



The Quality Control (QC) Level is a number that indicates the overall quality of the data in the main table of the DES formatted files. The \*QUALITY CONTROL LEVEL key phrase is located in the first few rows of the DES formatted data file. A short description of the QC level appears in parentheses after the number. As data usage and analyses progress, the Principal Investigator can upgrade the data to a higher QC level than originally submitted. The QC level and effective date for each data file are included in the following table.

## Time-Series Plots

Time-series plots are included for all of the numeric variables in each of the data files. These plots are useful for screening for outliers and visualization of values less than the detection limit and values with other quality flags. Please note that some but not all of the plots were visually examined for possible outliers and other issues. Links to the plots for each data file are included in the following table.

Data File	QC Level (Effective Date)	Links to Time-Series Plots (PDF)
NARSTO_EPA_SS_FRESNO_MET_5MIN_2000524_20001231_V1.csv	1 (20060830)	<a href="#">View 20000524_20001231</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20010101_20010630_V1.csv	1 (20060830)	<a href="#">View 20010101_20010630</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20010701_20011231_V1.csv	1 (20060830)	<a href="#">View 20010701_20011231</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20020101_20020630_V1.csv	1 (20060830)	<a href="#">View 20020101_20020630</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20020701_20021231_V1.csv	1 (20060830)	<a href="#">View 20020701_20021231</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20030101_20030630_V1.csv	1 (20060830)	<a href="#">View 20030101_20030630</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20030701_20031231_V1.csv	1 (20060830)	<a href="#">View 20030701_20031231</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20040101_20040630_V1.csv	1 (20060830)	<a href="#">View 20040101_20040630</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20040701_20040930_V1.csv	1 (20060830)	<a href="#">View 20040701_20040930</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20041001_20041231_V1.csv	1 (20060830)	<a href="#">View 20041001_20041231</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20050101_20050630_V1.csv	1 (20060830)	<a href="#">View 20050101_20050630</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20050701_20051231_V1.csv	1 (20070503)	<a href="#">View 20050701_20051231</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20060101_20060630_V1.csv	1 (20070503)	<a href="#">View 20060101_20060630</a>
NARSTO_EPA_SS_FRESNO_MET_5MIN_20060701_20061231_V1.csv	1 (20070503)	<a href="#">View 20060701_20061231</a>

## 3. References:

- Watson, J.G.; Chow, J.C. A wintertime PM<sub>2.5</sub> episode at the Fresno, CA, supersite; Atmos. Environ. 2002, 36(3), 465-475.
- Watson, J.G.; Chow, J.C.; Bowen, J.L.; Lowenthal, D.H.; Hering, S.V.; Ouchida, P.; Oslund, W. Air quality measurements from the Fresno supersite; JAWMA 2000, 50(8), 1321-1334.
- Watson, J.G.; Chow, J.C. Comparison and evaluation of in-situ and filter carbon measurements at the Fresno Supersite; J. Geophys. Res. 2002, 107(D21), ICC 3-1-ICC 3-15, doi: 10.1029/2001JD000573.
- Watson, J.G.; Chow, J.C.; Hering, S.V.; Fitz, D.R. Final report for Phase I of Fresno supersite measurements; prepared for Cooperative Institute for Atmospheric Sciences and Terrestrial Applications, Las Vegas, NV, by Desert Research Institute: Reno, NV, 2002.
- Watson, J.G.; Chow, J.C.; Lowenthal, D.H.; Stolzenburg, M.R.; Kreisberg, N.M.; Hering, S.V. Particle size relationships at the Fresno supersite; JAWMA 2002, 52(7), 822-827.
- Watson, J.G.; Chow, J.C.; Fitz, D.R. Quality assurance project plan - Fresno Supersite (Revision 0); prepared for U.S. Environmental



- Watson, J.G.; Chow, J.C. Zone of representation for the Fresno, CA supersite; JAWMA 2002, in preparation.

## 4. Contact Information:

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### Data Center:

The User and Data Services Office at the Langley Atmospheric Science Data Center is involved throughout the system to monitor the quality of data on ingest, to ensure prompt replies to user questions, to verify media orders prior to filling them, and to ensure that the needs of the users are being met.

If you have a problem finding what you need, trouble accessing the system, or need an answer to a question concerning the data or how to obtain data, please contact the User and Data Services staff.

Telephone: (757) 864-8656  
FAX: (757) 864-8807  
E-mail: [support-asdc@earthdata.nasa.gov](mailto:support-asdc@earthdata.nasa.gov)  
URL: <http://eosweb.larc.nasa.gov>

## 5. Acknowledgement:

When data from the Langley Atmospheric Science Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Science Data Center".

The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data that we have distributed. This will help us determine the use of data that we distribute, which is helpful in optimizing product development. It also helps us to keep our product-related references current.

Please contact us at [support-asdc@earthdata.nasa.gov](mailto:support-asdc@earthdata.nasa.gov) for instructions on mailing reprints.

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